

greyish black, the primaries with a greyish-white spot at the end of the cell. The basal half of the secondaries greyish white, slightly tinged with yellow on the inner margin above the anal angle. The underside of both wings greyish black; primaries with two spots at the end of the cell, and a marginal row of spots extending from the costal margin close to the apex to the anal angle. Secondaries with four white elongated streaks close to the apex, and a large chrome-yellow patch on the inner margin. The head, thorax, abdomen, antennæ, and legs black.

Expanse ♂ 2 inches, ♀ 2¼ inches.

Hab. Malay Peninsula, Sungei Ujong.

XVI.—*Further note on Francolinus Hildebrandti, Cabanis, and Observations on Pternistes Humboldtii, Peters.* By W. R. OGILVIE-GRANT (Nat. Hist. Mus.).

IN the Ann. & Mag. Nat. Hist. 1889, iv. p. 145, I published the singular fact, previously suspected by myself, and afterwards proved by Mr. Hunter, that *Francolinus Altumi*, Fischer and Reichenow, is the male of *F. Hildebrandti*, Cabanis, and that the latter name, having priority, must stand. Mr. H. C. V. Hunter, to whom we are indebted for a fine series of these specimens, writes as follows in Appendix I. to Sir John Willoughby's 'East Africa and its Big Game,' p. 292:— "That these are one species there is little doubt. Both Dr. Abbott and I myself sexed a great number of these birds; all the *Hildebrandti* turning out to be females, and all the *Altumi* males. The Wa-čaga boys daily brought in many of them to camp alive, probably caught in the same trap, and at least fifty birds were sexed with the above result. They also, like *Schuetti*, live in thick low bush, and were rarely shot." I mentioned the above discovery to Capt. Shelley, who recorded the bare fact in his paper on the birds collected by Mr. Hunter in Eastern Africa (P. Z. S. 1889, p. 370), but without giving any reason or referring to my paper as quoted above. By some extraordinary accident he also included *F. Schuetti* in their synonymy, placing all three names under the heading *Francolinus Altumi*. This error called forth a somewhat indignant reply from Herr Matschie (J. f. O. 1889, p. 340), in which he very rightly ridicules the idea of *F. Schuetti* being synonymous with *F. Hildebrandti* and *F. Altumi*, and remarks that it may not be absolutely

impossible for *F. Hildebrandti* to be the young of *F. Altumi*, in which case the former name would have priority. But it is perfectly clear that the type *F. Hildebrandti* is a fully adult female, and exactly similar to many others before me.

Dr. Reichenow (J. f. O. 1890, p. 77) supplements Herr Matschie's remarks as follows:—"The description of *F. Hildebrandti* is founded on a female specimen. Comparing this specimen with an apparently equally adult female of *F. Altumi* in the Berlin collection, the former is distinguished by having the ground-colour of the upper parts rust-colour, while in the latter it is olive-grey*. The underside in the former is intense rust-brown, in the latter it is fawn-colour; and the former has uniform reddish-brown cheeks, which in the latter are grey-brown with black streaks. The male of *F. Hildebrandti* is still unknown, and may, like the male of *F. Altumi*, have the underparts spotted with black."

It will naturally strike anybody reading the above that Dr. Reichenow, while denying the truth of my statement, here records for the *first time* the extraordinary fact that the male and female of his *F. Altumi* are totally different from one another! A fact unique among Francolins apparently causes him no surprise, and is not thought worthy of previous record! The description given of his so-called adult female in the Berlin Museum, which he compares with the type of *F. Hildebrandti*, is so meagre that it is difficult to form a very definite opinion, but I should gather from his remarks that his specimen is probably an immature male with the sex wrongly determined.

With regard to the identity of *Pternistes Humboldti*, Peters, with *P. leucoparæus*, Fischer and Reichenow, determined by Capt. Shelley and myself and recorded by him in the above-mentioned paper, Herr Matschie (J. f. O. 1889, p. 340) remarks:—"P. leucoparæus is considerably nearer to *P. nudicollis* than to *P. Humboldti*. *P. leucoparæus* and *P. nudicollis* are both grey-brown above, with black shaft-streaks without a trace of bands. *P. Humboldti* is yellowish brown above, with light bands on the back and tail, which bands are edged with dark towards the ends of the feathers. *P. leucoparæus* differs from *P. nudicollis* by the white throat-streak proceeding from the angle of the mouth, which in *P. nudicollis*

* All the specimens in the British Museum, both male (*F. Altumi*) and female (*F. Hildebrandti*), have the upper parts exactly alike, the ground-colour being rust-colour, shading into greyish olive towards the edges of some of the feathers.

collis is black with a white edge to each feather*, as well as by the white head-feathers, which have a black shaft-streak and a black border, whilst in *P. nudicollis* these feathers are grey, with a black shaft-streak but no border."

Reichenow supplements these remarks (J. f. O. 1890, p. 77) by saying:—" *P. Humboldti* cannot possibly be the same as *P. leucoparæus*, and should rather be united with *P. nudicollis*, which last species it resembles in having the cheeks striped with black, while in *P. leucoparæus* they are white; besides, it is much smaller."

The possibility of *P. leucoparæus* being the adult of *P. Humboldti* is not apparently entertained by either of the above writers; nevertheless there can be no doubt that this is so.

The translation of the original description of *P. Humboldti* given by Peters (Mon. Ak. Berl. 1854, p. 134) is as follows:—" *Francolinus Humboldtii*, n. sp.—Mandible, ophthalmic region, chin, throat, and feet blood-red; upper parts brown, ornamented with black spots and bars; sides of the neck white, with lanceolate black spots; front of the neck and breast greyish buff, with black spots; feathers of the thighs black, white in the middle. Total length 12·4 inches, bill 1·04, wing 6·4, tarsus 1·96, middle toe with nail 1·68. Tette."

From this description, as well as from the above remarks made from the type specimen in Berlin by the afore-mentioned writers, I gather without doubt that the type of *P. Humboldti* is a young bird; and, in fact, I have before me an immature specimen from Dar-es-Salaam [no. 3 *infra*] which agrees almost exactly with Peters's description, but is somewhat older. The British Museum collection contains four specimens of *P. Humboldti*, on which I make the following notes, clearly proving the identity of *P. leucoparæus* with this species:—

No. 1 (♀), ad., Zambesi (Sir J. Kirk).—Most of the feathers in the centre of the breast and belly black; feathers of the back with dark shaft-streaks, some of the scapulars and outer secondaries barred and spotted with black; feathers behind the gape white, on the sides of the neck black with white edges; no spurs. Wing 6·7, tarsus 2·1.

* In fully adult specimens of *P. nudicollis* the feathers from the angle of the mouth and on the fore part of the cheeks are jet-black; it is only in younger specimens that they are edged with white. In *P. Humboldti* the young have the feathers on these parts white with black shaft-streaks, while in the adult they are pure white.

No. 2 (♂), ad., Mazoro, north of the mouth of the Zambesi (Earl Russell).—Feathers of the middle of the breast and belly quite black; shaft-streaks on the back much fainter than in No. 1; feathers behind the gape white and, passing down the sides of the neck, entirely surround the naked throat; sides of the neck black; long spurs with a rudimentary second pair on each tarsus. Wing 7·4, tarsus 2·4.

No. 3 (♀), immature, Dar-es-Salaam (Sir John Kirk).—Most of the feathers on the centre of the breast and belly white, with wide black margins and black shafts; on the back like No. 1, but more black cross bars and spots; *feathers from the gape white with black shafts*, and on the sides of the neck black with white edges; no spurs. Wing 6·4, tarsus 2·1.

No. 4, ♀ ad., River Tana, Sept. 1888 (H. C. V. Hunter, Esq.).—Breast and back like No. 1; feathers behind gape white, and, passing down the sides of the neck, surround the bare throat; sides of the neck black with white edges; no spurs. Wing 7·1, tarsus 2·1.

No. 1 and No. 2 come from near the locality (Tette) whence the type of *P. Humboldti* was originally described; No. 3 almost exactly answers the description of that type; while No. 4 comes from the same locality (Osi River) whence *P. leucoparæus* was obtained, and both in plumage and sex corresponds exactly with Fischer and Reichenow's description. As there is not the slightest doubt that these four specimens represent only one species, it is evident that *P. leucoparæus* is synonymous with *P. Humboldti*.

XVII.—*A few Remarks on Prof. Packard's Papers entitled "Life-History of Drepana arcuata" and "Hints on the Evolution of the Bristles, Spines, and Tubercles of certain Caterpillars"* (Proc. Boston Soc. Nat. Hist. vol. xxiv. pp. 482-559). By A. G. BUTLER, F.L.S., F.Z.S., &c.

THE above-mentioned very suggestive papers, for a copy of which I am indebted to their indefatigable author, constitute one continuous article, containing much valuable information diligently brought into a small compass.